



## LITHOGRAPHY and PATTERNING on THIN FILM for HI-REL MIC

Space Applications Centre (SAC) of Indian Space Research Organisation has developed a process for Lithography and Patterning on thin film for High-Reliability Microwave Integrated Circuit (MIC) for space applications. This process fulfils RF/microwave properties like bonding, EM wave transmission/radiation, electrical conductivity, interconnection, corrosion protection, etc., making them a good base for mechanical strength, with thermal conductivity and thermal coefficient of expansion, matching with the carrier plate on which substrate is assembled.

These processes are qualified up to critical dimension (CD) of 100 microns for space use with tight tolerances after subjecting to a variety of tests like

visual inspection, metal adhesion test, environmental tests, etc., confirming to ISRO PAX-305 and MIL standards.

### Infrastructure Requirements

- Yellow room of class 100
- Clean room of class 10,000 and LAF for class 100 type
- Stereo Zoom Microscope up to 100x magnification
- Wet processing work station
- Ultrasonic/ mega-sonic cleaner
- Convection/ clean air oven/ hot plates
- Spinner for photo-resist coating
- LASER direct write/ UV exposure system
- Weighing balance
- DI water system
- Chemical etching room with fume hood and exhaust arrangement
- Nitrogen purged, temperature and humidity-controlled storage unit

### Salient Features

Process repeatability, patterning accuracy, defect density control and adhesion as per ISRO PAX-305 to ensure better yield.

### Technology Transfer

SAC/ISRO offers to transfer this technology of the **Lithography and Patterning on Thin Film for Hi-Rel MIC** developed by SAC to industries in India with adequate experience and facilities. Enterprises interested in obtaining knowhow may register and submit their proposal to IN-SPACE, Ahmedabad at [www.inspace.gov.in](http://www.inspace.gov.in)

#### For more details, Contact:

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